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CLAIMS:

1.      A method for updating images on a bi-stable display, the method comprising:

determining when an update mode of the bi-stable display (310, 400) changes from a monochrome update mode to a greyscale update mode; and

when the update mode changes as indicated in said determining step, applying a compensating pulse (805, 825, 845, 865) to the bi-stable display, the compensating pulse representing an energy based on an energy difference between: (a) an over-reset pulse (815, 835, 855, 875) used during the greyscale update mode and (b) a standard reset pulse (610, 660) used during the monochrome update mode.

2.      The method of claim 1, wherein:

applying a compensating pulse comprises applying a compensating pulse that has the same polarity as a polarity used in the standard reset pulse.

3.      The method of claim 1, wherein:

applying a compensating pulse comprises applying a compensating pulse that has the same amplitude as the standard reset pulse.

4.      The method of claim 1, wherein:

applying a compensating pulse comprises applying a compensating pulse wherein the pulse duration is the same as a difference between a duration of the over-reset pulse and a duration of the standard reset pulse.

5.      The method of claim 1, wherein:

applying a compensating pulse comprises applying a compensating pulse to the bi-stable display prior to a greyscale update waveform (800, 820, 840 and 860) used during the greyscale update mode.

6.      The method of claim 5, wherein:

the greyscale update waveform comprises shaking pulses (805, 825, 845, 865), followed by the over-reset pulse, followed by a drive pulse (818, 838).

7.      The method of claim 1, further comprising:

applying a waveform to the bi-stable display during the monochrome update mode that comprises shaking pulses (605, 655), followed by the standard reset pulse.

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8.      The method of claim 1, wherein:

the energy of the standard reset pulse is sufficient to move particles (6) that form the bi-stable display from a black color state to a white color state, or from a white color state to a black color state.

9.      The method of claim 1, wherein:

the energy of the over-reset pulse is more than sufficient to move particles (6) that form the bi-stable display from a black color state to a white color state, or from a white color state to a black color state.

10.     A program storage device tangibly embodying a program of instructions executable by a machine to perform a method for updating images on a bi-stable display, the method comprising:

determining when an update mode of the bi-stable display (310, 400) changes from a monochrome update mode to a greyscale update mode; and

when the update mode changes as indicated in said determining step, applying a compensating pulse (805, 825, 845, 865) to the bi-stable display, the compensating pulse representing an energy based on an energy difference between: (a) an over-reset pulse (815, 835, 855, 875) used during the greyscale update mode and (b) a standard reset pulse (610, 660) used during the monochrome update mode.

11.     A display device, comprising:

a bi-stable display (310, 400); and

a control (100) for updating images on the bi-stable display by determining when an update mode of the bi-stable display changes from a monochrome update mode to a greyscale update mode, and when the update mode changes, applying a compensating pulse (805, 825, 845, 865) to the bi-stable display, the compensating pulse representing an energy based on an energy difference between: (a) an over-reset pulse (815, 835, 855, 875) used during the greyscale update mode and (b) a standard reset pulse (610, 660) used during the monochrome update mode.

12.     The display device of claim 11, wherein:

the bi-stable display comprises an electrophoretic display.

13.     The display device of claim 11, wherein:

the display device comprises an electronic reading device.

14.     The display device of claim 11, wherein:

the display device comprises a sign.

15.     A method for updating images on a display device, the method comprising:

applying a greyscale update waveform (800, 820, 840 and 860) to the bi-stable display (310, 400) during a greyscale update mode; and

applying a monochrome update waveform (600, 650) to the bi-stable display during a monochrome update mode; wherein:

the monochrome update waveform includes a standard reset pulse (610, 660) and the greyscale update waveform includes an over-reset pulse (815, 835, 855, 875).

16.     The method of claim 15, wherein:

the energy of the standard reset pulse is sufficient to move particles (6) that form the bi-stable display from a black color state to a white color state, or from a white color state to a black color state.

17.     The method of claim 15, wherein:

an energy of the over-reset pulse is more than sufficient to move particles (6) that form the bi-stable display from a black color state to a white color state, or from a white color state to a black color state.

18.     The method of claim 15, wherein:

an energy of the over-reset pulse is substantially greater than an energy of the standard reset pulse.

19.     A program storage device tangibly embodying a program of instructions executable by a machine to perform a method for updating images on a bi-stable display, the method comprising:

applying a greyscale update waveform to the bi-stable display during a greyscale update mode; and

applying a monochrome update waveform (600, 650) to the bi-stable display during a monochrome update mode; wherein:

the monochrome update waveform includes a standard reset pulse and the greyscale update waveform includes an over-reset pulse.

20.     A display device, comprising:

a bi-stable display (310, 400); and

a control (100) for updating images on the bi-stable display by applying a greyscale update waveform (800, 820, 840 and 860) to the bi-stable display during a greyscale update

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mode, and applying a monochrome update waveform to the bi-stable display during a monochrome update mode; wherein:

the monochrome update waveform includes a standard reset pulse (610, 660) and the greyscale update waveform includes an over-reset pulse (815, 835, 855, 875).

21.     The display device of claim 20, wherein:

the bi-stable display comprises an electrophoretic display.

22.     The display device of claim 20, wherein:

the bi-stable display comprises an electronic reading device.

23.     The display device of claim 20, wherein:

the bi-stable display comprises a sign.